



H₂S: A hazard or a pathway towards value creation

Shadravan, Vahid; Buffel, Mélanie; Freiesleben, Louise la Cour; Chinda, Renata Carolina ; Pudi, Abhimanyu ; Mansouri, Seyed Soheil

Publication date:
2018

Document Version
Peer reviewed version

[Link back to DTU Orbit](#)

Citation (APA):
Shadravan, V., Buffel, M., Freiesleben, L. L. C., Chinda, R. C., Pudi, A., & Mansouri, S. S. (2018). *H₂S: A hazard or a pathway towards value creation*. Abstract from Technology Conference 2018 , Copenhagen, Denmark.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Danish Hydrocarbon Research and Technology Centre Technology Conference 2018

H₂S: A hazard or a pathway towards value creation

Vahid Shadravan*, Mélanie Buffel*, Louise la Cour Freiesleben*, Renata Carolina Chinda*,
Abhimanyu Pudi* and Seyed Soheil Mansouri*

* Process and Systems Engineering Centre (PROSYS), Department of Chemical and Biochemical Engineering,
Technical University of Denmark, Søltofts Plads, Building 229, DK-2800 Kongens Lyngby, Denmark

Presenting author: Vahid Shadravan

Is the presenting author a research assistant/MSc/PhD student/Postdoc? ☒ Yes/No

Programme your research belongs to: DHRTC – Radical Innovation Sprint

Abstract:

Sour natural gas compositions can vary over a wide concentration of H₂S and CO₂ and a wide concentration of hydrocarbon components. If the H₂S content exceeds the sales gas specification limit, the excess H₂S must be separated from the sour gas. The removal of H₂S from sour gas is called “sweetening.” The concept of our research is simultaneous catalytic conversion and separation of H₂S. The main objective is studying the feasibility of capturing H₂S followed by its conversion in a liquid phase. In this case, one possible route for H₂S capture is absorption in a primary liquid phase. The absorbed H₂S then can be directly converted in a same unit operation. Bi-phasic homogenous catalytic and/or phase transfer catalytic systems can be used to produce organic materials (e.g. thiols) from H₂S absorbed in the primary liquid phase. A basic illustration of the proposed concept is shown in the scheme below (Figure 1).

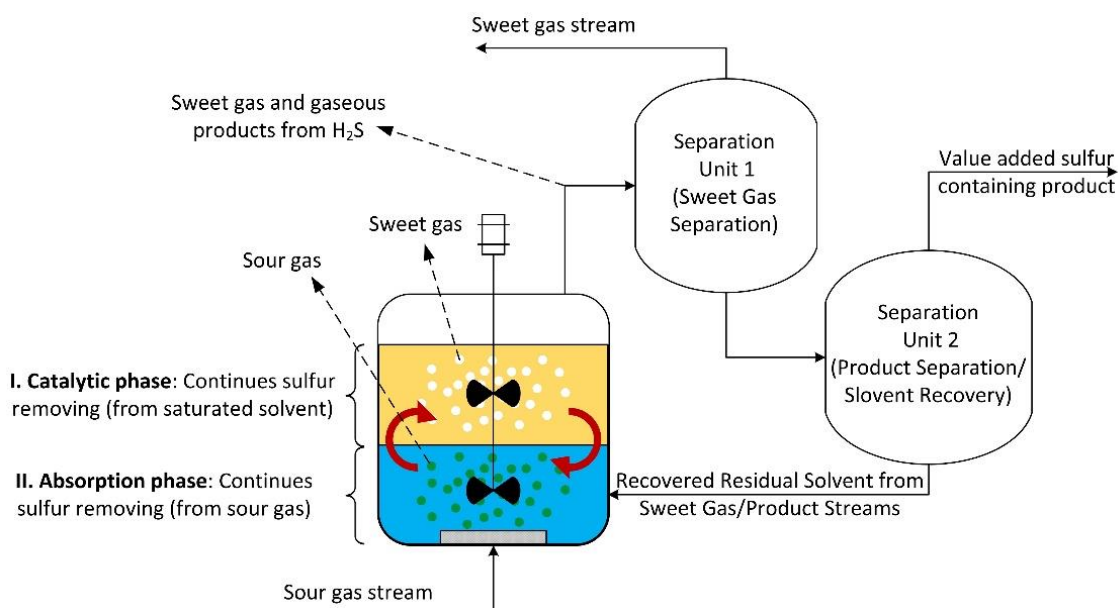


Figure 1. Schematic illustration of the proposed concept.



AARHUS UNIVERSITY



Technical
University of
Denmark



AALBORG UNIVERSITY
DENMARK